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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/709,454	11/13/2000	Masaki Matsui	1-99	4344

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EXAMINER
SHAKERI, HADI

ART UNIT	PAPER NUMBER
3723	14

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/709,454	Applicant(s) MATSUI, MASAKI	
	Examiner Hadi Shakeri	Art Unit 3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *44,47-58,61-65 and 67-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44,47-58,61-65 and 67-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 44, 47-56, 58, 61, 62, 64, and 67-69 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Towery et al.

Towery et al. discloses all the limitations of claim 44, i.e., a method of Chemical Mechanical Polishing (CMP) of a silicon semiconductor wafer using an oxidizing slurry comprising chromium oxide, col. 12, lines 40-44 and an oxidizing agent, e.g., hydrogen peroxide, col. 9, lines 30-38, on a polishing cloth, polyurethane pad (16) meeting all the steps including the step of increasing oxygen concentration by performing the polishing in the presence of the oxidizing agent, hydrogen peroxide, pressure range of between 0.1 and 3.0 kgf/cm^2 (0.49 col. 5, line 51), and the step of providing silicon carbide, in the alternative, it is noted that in col. 1, lines 10-26, the workpiece is referred to as silicon wafer having an insulating layer of non-conductive layer (SiO2) over a conductive layer which by definition would include conductive materials, e.g., silicon, silicon carbide, and as mentioned the slurry is used for CMP semiconductor processing and high precision processing, e.g., Abstract, which is not considered to be limited to only silicon use, therefore choosing silicon carbide as the workpiece would be a modification well within the knowledge of one of ordinary skill in the art, depending on operational and workpiece parameters.

Regarding claims 47-56, 58-62, 64, and 67-69, PA as applied above meets the limitations.

3. Claims 57, 63, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Towery et al. as applied to claims 44 and 61 above and further in view of Satake et al.

Towery et al. as applied above meets all the limitations of the above claims except for a heating means, e.g., a light source to irradiate the oxidizing agent. It is known in the art as evident by Satake et al. to use a light source for heating or irradiating in a chemical mechanical polishing. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the method and apparatus of Towery et al. by using a light source for heating or irradiating as taught by Satake et al. for more uniform polishing removal rate.

Response to Arguments

4. Applicant's arguments filed 03/10/03, have been fully considered but are they are not persuasive. The new limitation for the processing pressure range is met by Towery et al., and the argument that Towery et al. does not disclose a SiC workpiece is not persuasive since as mentioned above assuming that Towery et al.'s disclosure of silicon workpiece does not include SiC the use of the slurry for SiC would be an obvious modification and not sufficient reason for allowance and then the argument would be the reason for using oxidizing slurry in Towery et al. is different than the Applicant's, which also is not sufficient reason for allowance since the claim's step, perfuming the polishing in the presence of hydrogen peroxide is met, which by definition would generate oxygen.

Regarding the apparatus claims, in response to applicant's argument that Towery et al. does not disclose the workpiece and uses the slurry for different reasons, it is noted that, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use,

then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.

Joseph J. Hail, III
Supervisory Patent Examiner
Technology Center 3700

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April 10, 2003